



[6450-01-P]

DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

Guidelines for Home Energy Professionals: Standard Work Specifications for Single Family Energy Upgrades

AGENCY: Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy (DOE).

ACTION: Notice of availability.

SUMMARY: The U.S. Department of Energy Office of Energy Efficiency and Renewable Energy (EERE) is making final content available for the *Guidelines for Home Energy Professionals: Standard Work Specifications for Single Family Energy Upgrades (SWS)*. This content is a set of recommended work specifications applicable to energy efficiency retrofits of single family homes. These specifications are intended as a resource for any organization, company or individual involved in energy efficiency retrofits of residential homes. Draft versions of the *SWS* were made available for public comment on November 9, 2010 (75 FR 68781) and on March 29, 2012 (77 FR 19008). The comment period for the March 29, 2011 draft was extended through a notice issued on April 18, 2012 (77 FR 23238).

ADDRESSES:

The *SWS* content can be found at: www.wip.energy.gov/pdfs/sws_singlefamily.pdf

The Comment Report with responses to each comment received as well as revisions made to the text of the *SWS* can be found at Regulations.gov under docket ID# **EERE-2012-WE-0042** or via

direct link:

<http://www.regulations.gov/#!docketDetail;dct=FR%252BPR%252BN%252BO%252BSR%252BPS;rpp=25;po=0;D=EERE-2012-WE-0042> as well as: <http://nrel.pnnl.gov/forum.php>

FOR FURTHER INFORMATION CONTACT:

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For legal questions:

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SUPPLEMENTARY INFORMATION:

I. Background

EERE through the National Renewable Energy Laboratory is developing voluntary work specifications for the work involved in home energy upgrades. This content builds upon the considerable body of material already in circulation and the cumulative knowledge

gathered throughout the 30-year history of the Weatherization Assistance Program (WAP) and broader home performance industry.

The development of the *SWS* is supported by the WAP Training and Technical Assistance Plan (T&TA). The process of developing the *SWS* has involved participation by numerous stakeholders, including WAP practitioners and trainers, home performance contractors, building scientists, organized labor, healthy homes and worker safety experts, and other professionals in the building trades and throughout the retrofit industry. On November 9, 2010, EERE issued a notice requesting public comment on a draft version of the *SWS* (75 FR 68781). Additional background regarding this effort can be found in that document. The first public comment period resulted in nearly 1000 comments from approximately 100 unique commenters from across the Weatherization and home performance industries. As a result of issues identified by commenters, EERE gave further consideration to a number of technical issues and subsequently made changes to the *SWS*. EERE issued a notice requesting public comment on the changes to the *SWS* on March 29, 2012 (77 FR 19008). Due to the extent of the changes in the March 29, 2012 draft, additional time was requested by commenters for review and comment and the comment period for the March 29, 2012 draft was extended through a notice issued on April 18, 2012 (77 FR 23238). During this comment period DOE received submissions from 16 commenters, which DOE broke out into 367 comments.

II. Public Comments on the March 29, 2012 *SWS* Draft

DOE has reviewed all comments and incorporated those relevant and appropriate to the SWS. DOE received 4 comments from 4 individuals that were not applicable to the SWS and therefore has not provided any response to those comments.

Comments were received via an online website created specifically for the purpose of receiving, tracking and responding to comments. The individuals, agency and organizations that provided comments are listed below:

Name	Organization	Location
Gregory Brunner	United States Environmental Protection Agency (EPA)	Washington DC
Charles White	Plumbing Heating and Cooling Contractors (PHCC)	South Bend IN
Robert De Vries	Nu Wool Company Inc.	Jenison, MI
Eric Williams	reEnergize Program, City of Omaha	Omaha, NE
Minh Tu	www.phuclaithanh.com	New York
John Smith	No Organization Given	York
Jennifer Cleary	Association of Home Appliance Manufacturers (AHAM)	Washington, DC
Nurul Mustafit	Jepara Gallery	Jepara
Alex Alexandru	Jocuri noi	Bucharest
Donald Prather	Air Conditioning Contractors of America (ACCA)	Alexandria, VA
Ted A. Williams	American Gas Association (AGA)	Washington, DC
Chuck White	Plumbing, Heating and Cooling Contractors Association (PHCC)	South Bend IN
Phillip J. Wallace	Air-Conditioning, Heating & Refrigeration Institute (AHRI)	Washington, D.C.

John Diem	ESCO Institute	Dickinson, ND
Patrick Murphy	RSES	Des Plaines, IL
Steve Baden	RESNET	Oceanside, CA

Comments submitted were classified into one of three categories: Accepted, Accepted with Modifications, and Rejected.

- **Accepted:** Comment was accepted as presented by the Commentator
- **Accepted with Modifications:** Comment was accepted, however the manner in which the comment was presented, or suggested to be presented within the *SWS* was revised to be in line with the *SWS* template
- **Rejected:** Comment was not accepted for inclusion within the *SWS*

The following table presents a summary breakdown of the classification of the comments received during the final comment review period:

<i>Classification</i>	<i>Number of Comments</i>
Accepted	130
Accepted with Modification	104
Rejected	133
<u>Total</u>	<u>367</u>

Substantive, Reoccurring Comment Themes:

Substantive issues raised in the 367 comments can be divided into the following four categories:

1. Combustion Safety – 68
 2. Air Sealing –27
 3. International Residential Code – 22
 4. Licensed Professionals- 8
1. Combustion Safety:
 - a. *BPI-1100-T-2010*: The *SWS* incorporated a reference to a draft version of the BPI-1100-T-2010 document for many of the Combustion Safety specifications. Comments made on by ACCA, AGA, and RSES identified that this reference was a draft and therefore should not be included within the *SWS*. These comments are available at regulations.gov under Docket ID: EERE-2012-WE-0042. The Building Performance Institute, Inc. (BPI) officially released this standard on July 27, 2012 (now BPI-1100-T-2012). After review and consideration of the standard, DOE determined that for the purposes of the *SWS*, the draft BPI standard referenced in the *SWS* is functionally identical to BPI-1100-T-2012. This standard provides the most relevant combustion safety protocols currently available for retro-fitting existing homes under the WAP. The *SWS* has been updated in order to reflect the change in status of BPI-1100 from a draft to a published standard.

- b. *ANSI/ACCA Standard 12 and NFGC*: DOE received comments from ACCA and AGA indicating that the BPI procedure for combustion safety testing should not be specified and that either the National Fuel Gas Code (NFGC) or the ACCA 12 QH standard should be used instead. These comments are available at [regulations.gov](https://www.regulations.gov) under Docket ID: EERE-2012-WE-0042. Many of the comments fail to consider issues faced when working in the existing homes sector: appliances are not necessarily installed to code; other actions may have taken place over the years; and other issues that can impact venting of appliances may have been done poorly (e.g. duct leakage). The non-mandatory combustion safety testing in Annex G of the NFGC does not evaluate two of the most common causes of excessive depressurization, namely duct leakage of forced-air distribution systems and the closing of interior doors. The ACCA 12 QH standard references the BPI procedure but also lists several other options. A review of these options indicates that only the BPI procedure is sufficiently comprehensive in its requirements. For example, the procedure in ACCA 12 QH Appendix A turns on the air handler at the same time as exhaust fans, potentially obscuring the depressurization caused by the exhaust fans.

The combustion safety procedure in the BPI-1100-2012 standard is the most applicable to the work performed by the WAP. This method was

retained in the *SWS*. If a suitable replacement becomes ANSI-approved it may be appropriate to modify the reference.

2. Air Sealing

- a. *Reference Standards:* DOE received comments from ACCA, RSES and AHRI requesting that references be cited for action levels, as well as the addition of industry standards along with current citations to the International Residential Code. These comments are available at regulations.gov under Docket ID: EERE-2012-WE-0042. In reviewing the comments, it was apparent that the content required additional referencing that was also easily searchable in order to improve the comprehensiveness and usability of the *SWS*. Therefore, a cross-reference document was developed to allow for users to identify referenced standards for individual specification lines that is included as an Appendix to the *SWS* titled “Appendix C: Guide to Referenced Standards”.

3. International Residential Code (IRC)

- a. DOE received comments from ACCA and RSES, indicating the citation of specific sections of the 2012 IRC was not necessary. These comments are available at regulations.gov under Docket ID: EERE-2012-WE-0042. The comments identified that code sections are often revised and it would be better to cite “2012 IRC” versus a specific section. DOE acknowledges that code references are revised, however one of the goals of the *SWS* was

to allow users to identify and find referenced information easily without having to purchase or search through numerous pages of referenced text. Due to the size of the IRC, it was apparent that referencing a specific section allowed the user to efficiently identify the section to refer to and be able to apply that knowledge quickly to the task. Therefore, citation of specific sections of the 2012 IRC remain in the *SWS*.

4. Licensed Professionals

- a. DOE received comments from PHCC indicating that certain tasks should be carried out by individuals licensed in a particular trade. These comments are available at [regulations.gov](http://www.regulations.gov) under Docket ID: EERE-2012-WE-0042. DOE agrees that the use of licensed professionals to perform certain tasks is an important component of maintaining work quality and safety. Given the wide range of licensure and credentialing requirements across the country, DOE made the decision to include a notification at the beginning of each detail in the *SWS* to alert the reader that the detail may contain a task requiring a licensed or credentialed contractor. This is intended to ensure that the reader is aware of the possibility of the need for a licensed or credentialed professional and to encourage them to verify this with the authority having jurisdiction.

A full comment report with responses to each comment received as well as revisions made to the content of the *SWS* can be found at: <http://nrel.pnnl.gov/forum.php>

Issued in Washington, DC on March 5, 2013

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[FR Doc. 2013-07048 Filed 03/26/2013 at 8:45 am; Publication Date: 03/27/2013]